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PATENT ABSTRACTS OF JAPAN

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(54) METHOD FOR COOLING TARGET

(57)Abstract:

PURPOSE: To prevent the release and cracking of a target by allowing a refrigerant at a specified temp. to flow on the rear of the copper backing plate to which the target is fixed by metal bonding to remove the heat of the target.

CONSTITUTION: A plasma ion is struck against a target 101 to form a thin film 120 on a substrate 114. Since the target 101 is heated to a high temp. by the plasma ion, the target 101 is cooled with a refrigerant 103 through a copper backing plate 102. The refrigerant 103 is controlled to $\leq 0^{\circ}\text{C}$.

Ruggednesses or grooves are formed on the rear of the backing plate 102 to increase the contact area between the rear of the backing plate 102 and refrigerant 103. Since the heat of the target 101 is sufficiently removed, the bonding layer between the target 101 and backing plate 102 does not exceeds its m.p., and the target is not released.

